# Assessment of the Disease Burden of Acute Lower Respiratory Infection among Under-Five Children Due to Indoor Air Pollution in Sindhupalchowk District, Nepal

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**Background**

Acute Lower Respiratory Infection (ALRI) i.e. pneumonia, severe pneumonia and very severe disease as per the standard classification protocol of the government of Nepal (GoN) or World Health Organization (WHO), is one of the major killer of under-five children in Nepal. Acute Lower Respiratory Infection and attributable fraction to the exposure to solid fuel smoke in indoor environment. Solid fuel is the most common as it is used by more than 80 percent population for heating, cooking and other household purposes in Nepal and mostly women and young children are exposed to it.

**Methods**

This was a cross-sectional descriptive study following probability sampling method. Thirty clusters (wards) were selected following systematic random sampling technique with equal class interval and the sample represented 449 households and 292 children of under five years of age.

**Results**

 Solid biomass fuel was primary source of energy in Sindhupalchok district. Almost all (94.9%) household use bio-mass fuel i.e. dung, charcoal, fire wood, crop residue, etc for heating and cooking purposes; sizable people (4.2%) use mixed fuel i.e. both biomass and clean fuel for household purposes. It was found that the incidence of Acute Lower Respiratory Infection was1.03 episodes per child per year contributing 336 Disability Adjusted Life Years lost annually. And about 52 percent episodes (i.e 175 Disability Adjusted Life Years) of Acute Lower Respiratory Infection were attributed to indoor smoke in the district.

**Conclusions**

The use of less expensive smoke reduction option like Improved Cooking Stove use not only address the problem of Acute Lower Respiratory Infection but a range of health problems like Chronic Obstructive Pulmonary Disease, Eye problems, mental problems etc. and should be promoted.

**Keywords:** acute lower respiratory infection; disease burden; indoor air pollution; under five children.